

WHAT IS CLAIMED IS:

1. Isolated Rse or HPTK6 receptor protein tyrosine kinase (rPTK).

5 2. The Rse rPTK of claim 1, wherein the Rse rPTK is antigenically active.

3. The Rse rPTK of claim 1, wherein the Rse rPTK is biologically active.

0 4. The Rse rPTK of claim 1 sharing at least 80% sequence identity with the translated Rse sequence shown in Figure 1A.

15 5. The Rse rPTK of claim 4 sharing at least 90% sequence identity with the translated Rse sequence shown in Figure 1A.

6. The HPTK6 rPTK of claim 1, wherein the HPTK6 rPTK is antigenically active.

20 7. The HPTK6 rPTK of claim 1, wherein the HPTK6 rPTK is biologically active.

8. The HPTK6 rPTK of claim 1 sharing at least 80% sequence identity with the translated HPTK6 sequence shown in Figure 2.

25 9. The HPTK6 rPTK of claim 8 sharing at least 90% sequence identity with the translated HPTK6 sequence shown in Figure 2.

30 10. An isolated receptor protein tyrosine kinase comprising an amino acid sequence selected from the group consisting of:
the amino acid sequence shown in Figure 1A;
the amino acid sequence shown in Figure 1B; and
the amino acid sequence shown in Figure 2.

11. An isolated extracellular domain of Rse receptor protein tyrosine kinase (rPTK) essentially free of transmembrane and intracellular domains of full sequence Rse rPTK or an isolated extracellular domain of HPTK6 rPTK essentially free of transmembrane and intracellular domains of full sequence HPTK6 rPTK.

12. The extracellular domain of Rse rPTK of claim 11, sharing at least 80% sequence identity with the translated extracellular domain of Rse rPTK shown in Figure 1A.

13. The extracellular domain of Rse rPTK as claimed in claim 12, sharing at least 90% sequence identity with the translated extracellular domain of Rse rPTK shown in Figure 1A.

14. The extracellular domain of HPTK6 rPTK of claim 11, sharing at least 80% sequence identity with the translated extracellular domain of HPTK6 rPTK shown in Figure 2.

15. The extracellular domain of HPTK6 rPTK of claim 14, sharing at least 90% sequence identity with the translated extracellular domain of HPTK6 rPTK shown in Figure 2.

16. A composition comprising the Rse rPTK of claim 3 and a pharmaceutically acceptable carrier.

17. A composition comprising the HPTK6 rPTK of claim 7 and a pharmaceutically acceptable carrier.

18. An isolated ligand capable of binding Rse receptor protein tyrosine kinase (rPTK) or HPTK6 rPTK.

19. The ligand of claim 18, wherein the ligand comprises a

polyclonal antibody or a monoclonal antibody.

20. An isolated Rse receptor protein tyrosine kinase (rPTK) or HPTK6 rPTK nucleic acid molecule.

21. The isolated nucleic acid molecule of claim 20 having a nucleic acid sequence selected from the group consisting of:
 (a) the nucleic acid sequence shown in Figure 1A;
 (b) the nucleic acid sequence shown in Figure 1B;
 (c) the nucleic acid sequence shown in Figure 2;
 (d) a sequence corresponding to the sequence of (a), (b) or (c) within the scope of degeneracy of the genetic code;
 (e) a sequence which hybridizes with a sequence complementary to the sequence from (a), (b), (c) or (d) under stringent conditions and which codes for a receptor protein with tyrosine kinase activity.

22. An isolated nucleic acid molecule encoding a ligand to Rse receptor protein tyrosine kinase (rPTK) or HPTK6 rPTK.

23. A vector comprising the nucleic acid molecule of claim 20.

24. A host cell comprising the vector of claim 23.

25. A method for preparing Rse receptor protein tyrosine kinase (rPTK) or HPTK6 rPTK comprising culturing a host cell transfected to express Rse rPTK or HPTK6 rPTK nucleic acid and recovering the Rse rPTK or HPTK6 rPTK from the host cell culture.